

TOSHIBA Transistor Silicon NPN Triple Diffused Type

2SD2352

Power Amplifier Applications

- High DC current gain: $h_{FE} = 800$ to 3200
- Low collector saturation voltage: $V_{CE(sat)} = 0.3$ V (typ.)

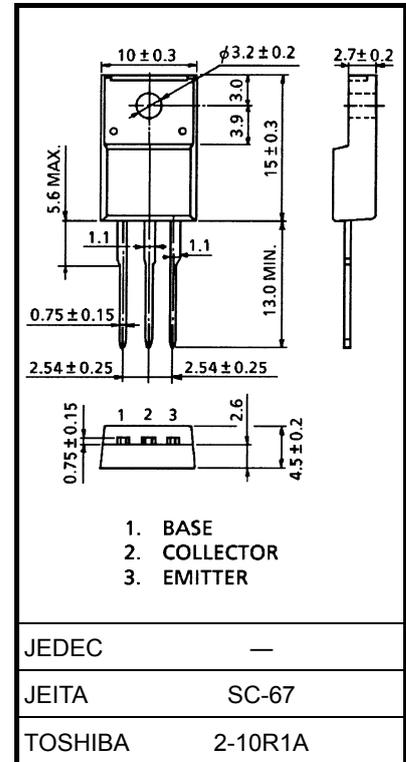
Absolute Maximum Ratings (Tc = 25°C)

Characteristics		Symbol	Rating	Unit
Collector-base voltage		V_{CBO}	60	V
Collector-emitter voltage		V_{CEO}	60	V
Emitter-base voltage		V_{EBO}	7	V
Collector current	DC	I_C	2	A
	Pulse	I_{CP}	4	
Base current		I_B	0.4	A
Collector power dissipation	Ta = 25°C	P_C	2	W
	Tc = 25°C		25	
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-55 to 150	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Unit: mm

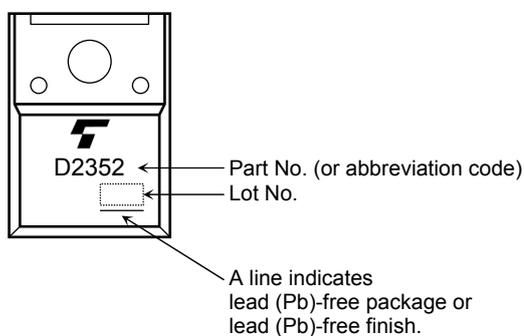


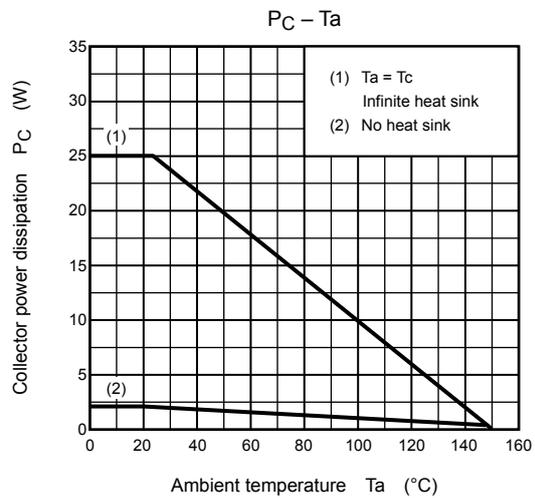
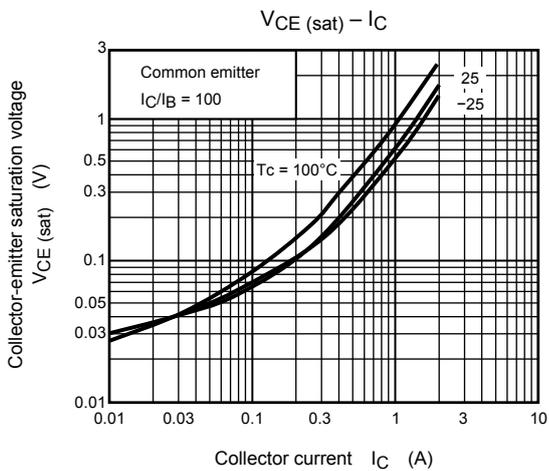
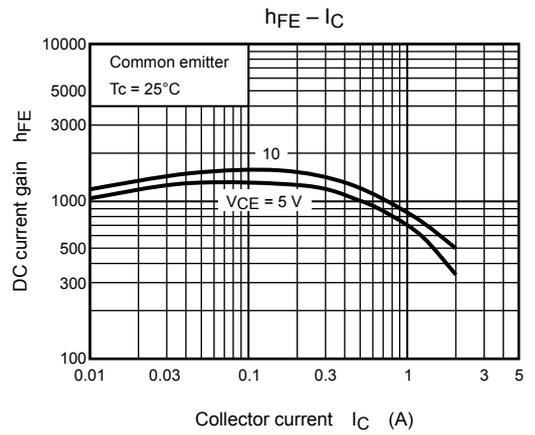
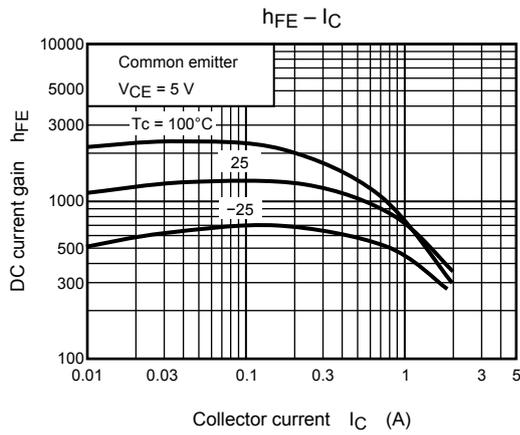
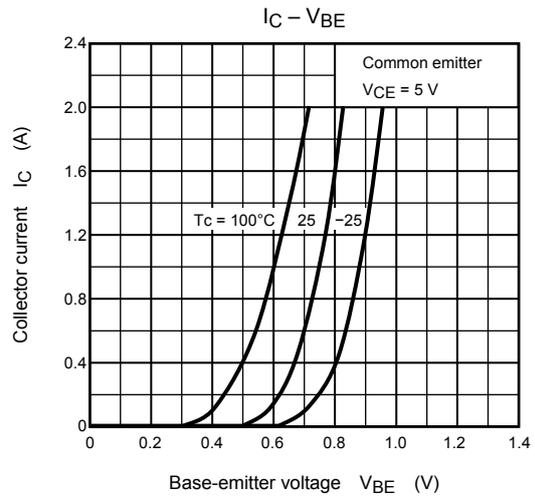
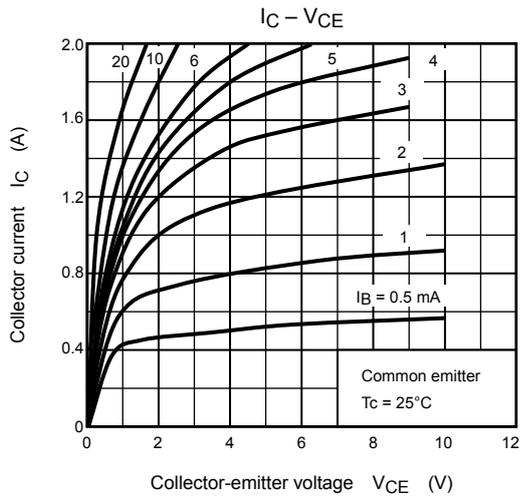
Weight: 1.7 g (typ.)

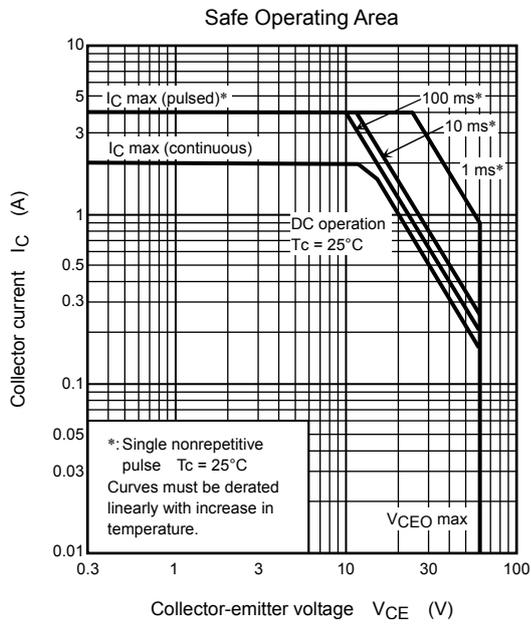
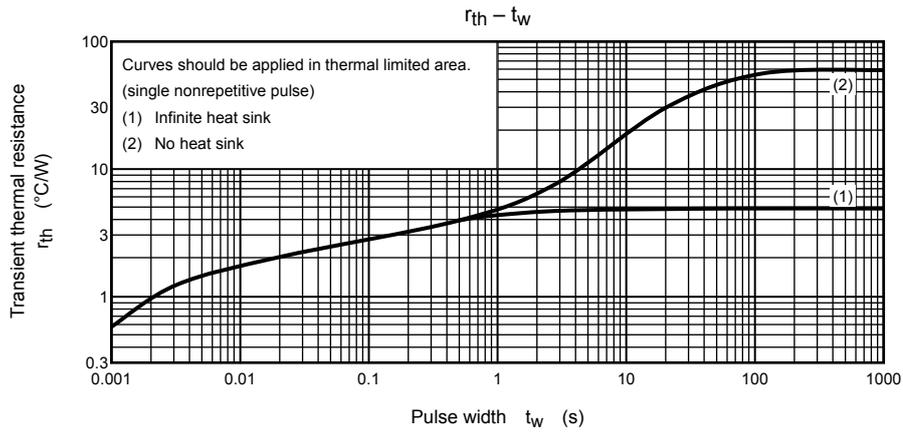
Electrical Characteristics (Tc = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 60 \text{ V}, I_E = 0$	—	—	100	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 7 \text{ V}, I_C = 0$	—	—	100	μA
Collector-emitter breakdown voltage	V_{CEO}	$I_C = 50 \text{ mA}, I_B = 0$	60	—	—	V
DC current gain	$h_{FE} (1)$	$V_{CE} = 5 \text{ V}, I_C = 0.1 \text{ A}$	800	—	3200	
	$h_{FE} (2)$	$V_{CE} = 5 \text{ V}, I_C = 1 \text{ A}$	350	—	—	
Collector-emitter saturation voltage	$V_{CE} (\text{sat})$	$I_C = 0.5 \text{ A}, I_B = 5 \text{ mA}$	—	0.3	1.0	V
Base-emitter voltage	V_{BE}	$V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$	—	0.7	1.0	V
Transition frequency	f_T	$V_{CE} = 5 \text{ V}, I_C = 0.5 \text{ A}$	—	17	—	MHz
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	—	30	—	pF

Marking







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20070701-EN

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